

**TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A  
FILING UNDER 35 U.S.C. 371**

951/48911

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

**09/581287**

INTERNATIONAL APPLICATION NO.

PCT/EP98/07698

**EP98/07687**

INTERNATIONAL FILING DATE

November 27, 1998

PRIORITY DATE CLAIMED

December 11, 1997

TITLE OF INVENTION

Device for Supplying Electricity to a Motor Vehicle

APPLICANT(S) FOR DO/EO/US

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371
3. ☐ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☐ A copy of the International Application as filed (35 U.S.C. 371(c)(2)).
  - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

**Item 11. to 16. below concern other document(s) or information included:**

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.  
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☒ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)		INTERNATIONAL APPLICATION NO.		ATTORNEY'S DOCKET NUMBER	
09/581287		19754964.0		951/48911	
17. <input type="checkbox"/> The following fees are submitted:				CALCULATIONS	
Basic National Fee (37 CFR 1.492(a)(1)-(5)):				PTO USE ONLY	
Search Report has been prepared by the EPO or JPO ..... \$840.00				\$840.00	
International preliminary examination fee paid to USPTO (37 CFR 1.482) ..... \$670.00					
No international preliminary examination fee paid to USPTO (37 CFR 1.482)					
but international search fee paid to USPTO (37 CFR 1.445(a)(2)) ..... \$690.00				\$0.00	
Neither international preliminary examination fee (37 CFR 1.482) nor					
international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$ 970.00					
International preliminary examination fee paid to USPTO (37 CFR 1.482)					
and all claims satisfied provisions of PCT Article 33(2)-(4) ..... \$96.00					
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				\$840.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30				\$	
months from the earliest claimed priority date (37 CFR 1.492(e)).					
Claims	Number Filed	Number Extra	Rate		
Total Claims	-20=	0	X \$18.00	\$0.00	
Independent Claims	-3=	0	X \$78.00	\$0.00	
Multiple dependent claims(s) (if applicable)			+ \$260.00	\$	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must				\$	
also be filed. (Note 37 CFR 1.9, 1.27, 1.28).					
<b>SUBTOTAL =</b>				\$	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30				\$	
months from the earliest claimed priority date (37 CFR 1.492(f)).				+	
<b>TOTAL NATIONAL FEE =</b>				\$	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be				\$40.00	
accompanied by an appropriate cover sheet (37 CFR 3.28,3.31). \$40.00 per property +					
<b>TOTAL FEE ENCLOSED =</b>				\$0.00	
				Amount to be: refunded \$	
				charged \$	
a. <input checked="" type="checkbox"/> Two checks in the amount of \$ 840.00 for the filing fee and \$40.00 for the assignment recording fee are enclosed					
b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A					
duplicate copy of this sheet is enclosed.					
c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees, which may be required, or credit any overpayment to					
Deposit Account No. <u>05-1323</u> . A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b))					
must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO:					
Evenson, McKeown, Edwards & Lenahan, P.L.L.C.					
1200 G Street, N.W., Suite 700					
Washington, D.C. 20005					
Tel. No. (202) 628-8800					
Fax No. (202) 628-8844					
SIGNATURE					
Vincent J. Sunderdick for					
Donald Evenson					
NAME					
29, 004					
REGISTRATION NUMBER					
June 12, 2000					
DATE					

09/581287

416 Rec'd PCT/PTO 12 JUN 2000

Attorney Docket: 951/48911  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: STEFAN REIMER ET AL.

Serial No.: Not Yet Assigned PCT: PCT/EP98/07687

Filed: June 12, 2000

Title: DEVICE FOR SUPPLYING ELECTRICITY TO A  
MOTOR VEHICLE

PRELIMINARY AMENDMENT

Box PCT

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Please enter the following amendments to the specification and claims, prior to the examination of the application during the U.S. National Phase.

IN THE SPECIFICATION:

Submitted herewith is a substitute specification and marked-up copy thereof which includes the changes made by way of the Annexes to the International Preliminary Examination Report.

IN THE CLAIMS:

Cancel claims 1 and 2 and add new claims 3-6 as follows:

-- 3. A device for supplying electricity to a motor vehicle, comprising:

a chargeable battery;

a voltage transformer having a first end connected to said chargeable battery;

a capacitor for charging said chargeable battery connected to a second end of said voltage transformer wherein the maximum voltage of said capacitor has a value which is greater than a maximum voltage of said battery.

4. A device according to Claim 3, wherein said capacitor is maximally discharged until the voltage of said capacitor is equal to the value of the actual voltage of the battery.

5. A method for supplying electricity to a motor vehicle, comprised the steps of:

providing a rechargeable battery having a nominal voltage;  
providing an energy accumulator having a maximum voltage which substantially exceeds said nominal voltage;

maximally discharging said energy accumulator until the voltage of said accumulator is substantially equal to said nominal voltage of said rechargeable battery.

6. A battery recharging system for improving the service like of a rechargeable battery, said system comprising:

energy accumulator means having a first nominal voltage greater than a maximum voltage of said rechargeable battery;

means connected between said energy accumulator and said rechargeable battery for discharging said energy accumulator by a voltage decreasing transformation until said first nominal voltage has been reduced to a voltage having a value substantially equal to the maximum voltage of said rechargeable battery.--

**IN THE ABSTRACT:**

Serial No. Not Yet Assigned

Please add an Abstract of the Disclosure submitted herewith on a separate page.


REMARKS

Entry of the amendments to the specification and claims, as amended before examination of the application in the U.S. National Phase is respectfully requested. If there are any questions regarding this Preliminary Amendment or this application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #951/48911).

Respectfully submitted,

June 12, 2000

  
\_\_\_\_\_  
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Registration No. 29,004

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VJS:DDE:tvq

Serial No. Not Yet Assigned

--ABSTRACT OF THE DISCLOSURE

A system for supplying electricity to a motor vehicle using a capacitor having a maximum value greater than the maximum value of a rechargeable battery. A transformer provides discharging of the battery from its maximum voltage down to the maximum voltage of the battery in order to provide excess energy in a short period of time to effectively charge the battery and simultaneously increase the service life of the chargeable battery.--

DEVICE FOR SUPPLYING ELECTRICITY TO A MOTOR VEHICLE

The invention relates to a device for supplying  
electricity to a motor vehicle according to the preamble of  
Claim 1. }

A device of this type is known, for example, from German Patent Document DE 43 40 350 C2. This known device has a rechargeable battery, a capacitor which can be switched in parallel to the battery, and a circuit arrangement in the form of a logic circuit arranged between the battery and the capacitor. When the starter in the vehicle is actuated, the logic circuit defines a time window and carries out at least one voltage query. As a function of the result of this voltage query, the logic circuit switches the capacitor in parallel to the battery. The capacitor is preferably switched in parallel only when the voltage of the battery within the time window falls below a predetermined value. By means of this known circuit arrangement, by way of the capacitor switched in parallel to the battery, the starting of the vehicle is to be also still ensured when the battery is almost discharged. However, by means of the parallel connection of the capacitor with the battery, only a maximal capacitor voltage can be reached whose value cannot exceed the value of

the battery voltage. This known circuit arrangement is therefore not suitable for storing by means of the capacitor a high excess of energy for a short time and thus for effectively recharging a discharged battery.

In addition, a circuit arrangement for supplying electricity to a motor vehicle is known from German Patent Document DE 195 22 563 A1, in the case of which the energy stored in a capacitor, particularly the electric energy generated during a recuperative braking, is fed to a rechargeable battery in a controlled manner. However, this known circuit arrangement discloses no details concerning the type of the control as well as concerning the ratio of the maximally possible capacitor voltage to the battery voltage.

Furthermore, with respect to the technical environment, reference is made to European Patent Document EP 0 568 655 B1, from which a device is known for supplying electricity to a motor vehicle which has two chargeable batteries of different nominal voltages and a circuit arrangement in the form of a voltage transformer arranged between the batteries.

It is an object of the invention to improve a device of the initially mentioned type for the supply of electricity to a motor vehicle such that, on the one hand, an energy excess which is available for a short time is effectively utilized



for charging a vehicle battery and simultaneously the service life of the rechargeable vehicle battery is increased.

This object is achieved by means of the characterizing features of Claim 1. An advantageous further development of the invention is the object of Claim 2.

The use of a capacitor (such as a Power Cap or Super Cap) whose nominal voltage and thus its maximally possible voltage is preferably several times higher than the nominal voltage of the battery is essential to the invention. By using such a buffer capacitor with a large voltage variation range as the energy accumulator, the voltage at the capacitor can be significantly increased beyond the battery voltage in order to be able to store, in the case of a short-term energy excess, as, for example, as the result of recuperative braking, this energy excess in the best possible manner. The battery is charged in a controlled manner by means of this capacitor by way of a voltage transformer, preferably a DC/DC converter.

In a particularly advantageous further development of the invention, the charging of the battery is controlled by means of the capacitor by way of the voltage converter such that the charged capacitor is maximally discharged until a capacitor voltage is reached which is approximately equal to the momentary actual voltage of the battery. By means of this

advantageous further development, a circuit arrangement can be used as a voltage transformer which only has to carry out a "downward" transformation in the sense of a voltage reduction starting from the capacitor voltage. As the result, the voltage transformer can be built up in a particularly simple manner at reasonable cost between the battery and the capacitor.

The invention also comprises an expanded voltage transformer in such a manner that, in the reverse direction, the capacitor can be charged by way of the battery to a voltage whose value is larger than the value of the battery voltage.

The circuit arrangement according to the invention is used in the case of motor vehicles with a chargeable battery which has a higher than the conventional nominal voltage (for example, 36 V instead of 12 V) in order to ensure the supply of high-power consuming devices whose number is constantly increasing in motor vehicles.

By means of the device for supplying electricity according to the invention, on the one hand, an energy excess which is available for a short time is effectively utilized and, on the other hand, a variable multivoltage electrical wiring is permitted.

The drawing illustrates an embodiment of the invention.

Figure 1 is a view of a circuit arrangement according to the invention;

Figure 2 is a view of a possible course of the capacitor voltage according to the control of the invention for charging the battery.

In Figure 1, a capacitor 1 is connected by way of a voltage transformer 2, which preferably is a DC/DC converter, with a vehicle battery 3. As the capacitor 1, a buffer capacitor (power Cap), is preferably used which has a nominal voltage or maximally possible voltage  $U_{c \max}$  of, for example, 80 V. The battery 3 is, for example, a conventional battery with a nominal voltage  $U_b$  of, for example, 36 V. Thus, the nominal voltage of the capacitor 1 is approximately by the factor 2 larger than the nominal voltage of the battery.

The capacitor 1 can be charged by way of an electric connection A which is connected, for example, with a generator for the braking energy recirculation. The capacitor voltage  $U_c$  is directly proportional to the charging condition of the capacitor 1. The ratio of the charging condition or of the charged amount of energy  $E$  to the capacitor voltage  $U_c$  is obtained by the following formula:  $E = 1/2 \cdot C \cdot U_c^2$ ; in the

case of the double voltage  $U_c$ , four times the amount of Energy  $E$  can therefore be accumulated.

In addition, it is pointed out that, as a result of its cycle stability and full-load stability, the service life of such a capacitor is significantly longer than that of a conventional motor vehicle battery.

If the capacitor 1 is charged at least in such a manner that the capacitor voltage  $U_c$  is higher than the actual voltage  $U_{B \text{ actual}}$  of the battery 3, the voltage transformer 2 controls the charging of the battery 3 by the capacitor 1 corresponding to the requirement of the battery 3 and/or the electrical wiring (not shown here) optionally connected with the battery 3.

Figure 2 illustrates in detail the manner and mode of the control of the voltage transformer 2. On the X-axis, Figure 2 shows the load condition  $L$  or the accumulated amount of energy  $E$  and, on the Y-axis, Figure 2 shows the pertaining capacitor voltage  $U_c$ . According to the invention, for example, based on a completely charged capacitor 1 ( $U_c = U_{c \text{ max}}$ ), the charging of the battery 3 by the discharging of the capacitor 1 is maximally carried out until the capacitor voltage  $U_c$  has approximately reached the value of the actual voltage  $U_{B \text{ actual}}$  of the battery voltage 3. As a result, the voltage

transformer 2 must carry out only a voltage downward transformation. If the capacitor 1 were to be discharged further, starting from the falling below the capacitor voltage  $U_C = U_{B \text{ actual}}$ , the voltage transformer 2 would have to carry out a voltage upward transformation in the sense of a voltage increase. Although this can be technically implemented, it is inefficient in view of an efficiency which is to be as high as possible.

If, as in the illustrated embodiment according to Figure 2, a discharge of the capacitor 1 has taken place starting from a voltage  $U_C = 80V$  in such manner that the capacitor voltage  $U_C$  has reached the value of the actual voltage  $U_{B \text{ actual}} = 36 V$  (here equal to the nominal voltage  $U_B=36 V$ ) of the battery 3, because of the above-mentioned relationships between the load condition L or the amount of energy E and the capacitor voltage  $U_C$ , in the event of a decrease of the capacitor voltage  $U_C$  here by approximately half, 3/4 of the amount of energy E accumulated in the capacitor was already delivered to the battery 3.

By means of this control of the charging of the battery according to the invention, an optimal compromise is achieved between the circuit-related expenditures of the voltage transformer 2 and a utilization of the energy excess charged in the capacitor 1 for a short time, which is as efficient as

possible.

## CLAIMS:

1. Device for supplying electricity to a motor vehicle, having a chargeable battery, a capacitor and a circuit arrangement arranged between the battery and the capacitor, characterized in that the circuit arrangement is a voltage transformer (2), in that the nominal voltage ( $U_{c \text{ max}}$ ) of the capacitor (1) is higher than the nominal voltage ( $U_B$ ) of the battery (3), in that the battery (3) can be charged by means of the capacitor (1), and in that the charging of the battery (3) is controlled by means of the capacitor (1) by way of the voltage transformer (2).

2. Device according to Claim 1, characterized in that the charging of the battery (3) is controlled by means of the capacitor (1) by way of the voltage transformer (2) such that the capacitor (1) is maximally discharged until a value of the capacitor voltage ( $U_c$ ) is reached which is equal to the value of the actual voltage ( $U_{B \text{ actual}}$ ) of the battery (3).

# Translation of Figures:

ist	=	actual
Aufladung	=	charging
Entladung	=	discharging



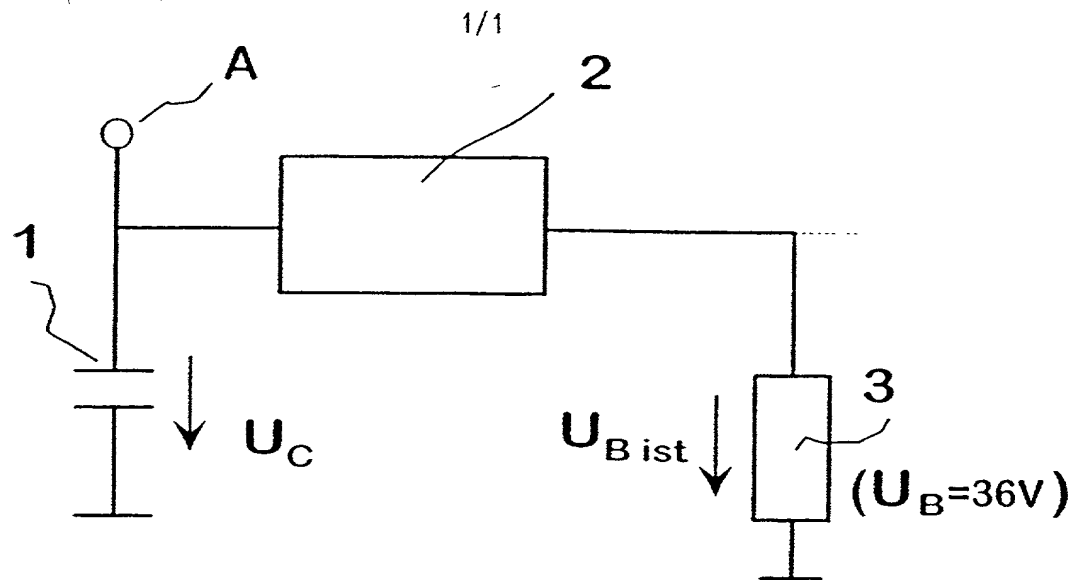


Fig. 1

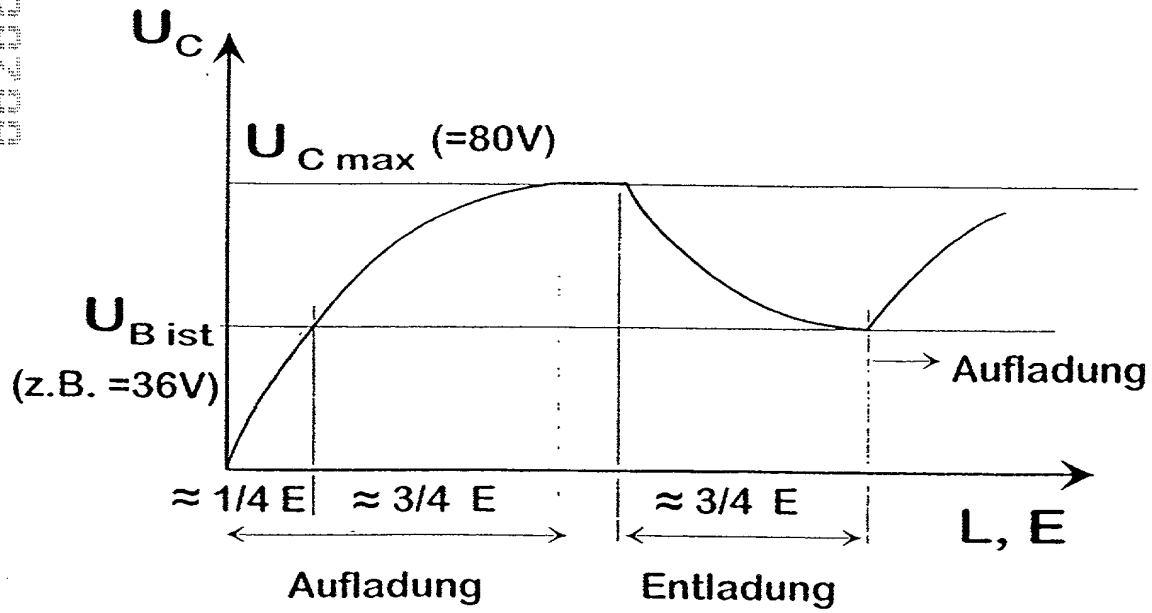


Fig. 2

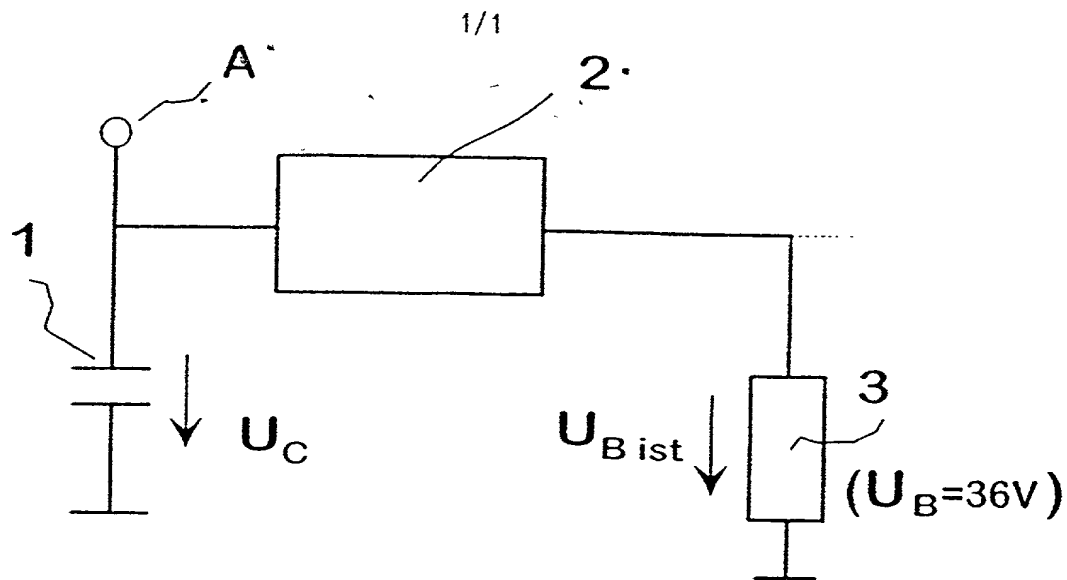


Fig. 1

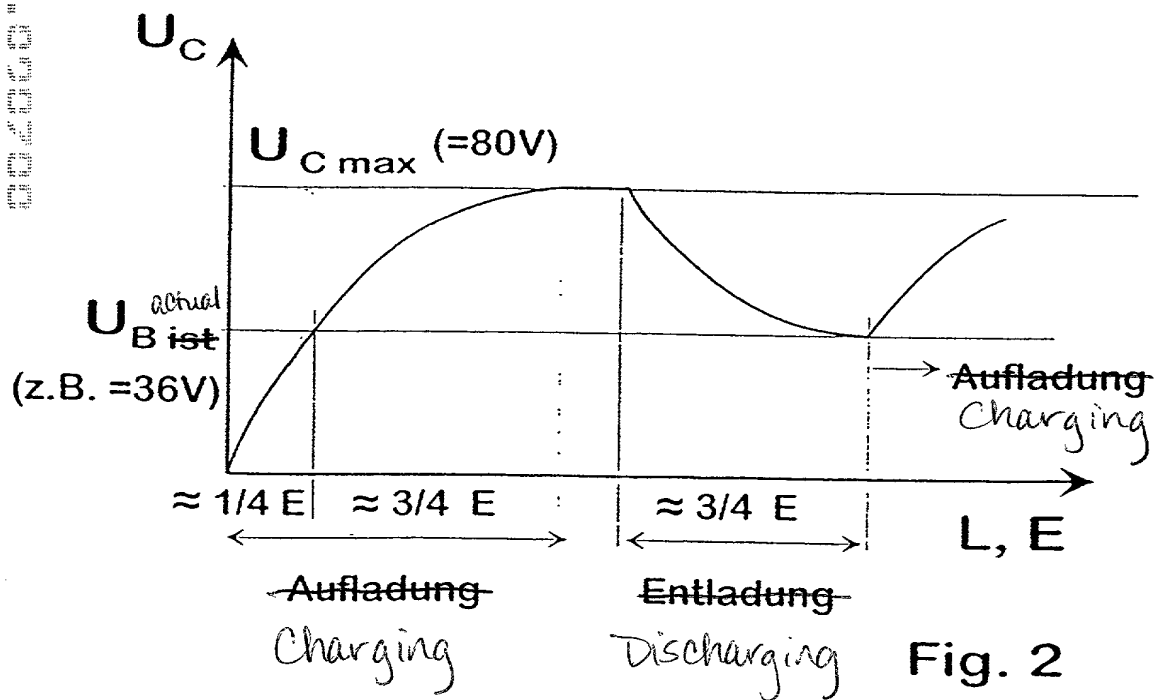


Fig. 2

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY  
(includes Reference to PCT International Applications)

ATTORNEY'S DOCKET NUMBER

951/48911

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Device for Supplying Electricity to a Motor Vehicle

the specification of which (check only one item below):

☐ is attached hereto.

☐ was filed as United States application

Serial No. \_\_\_\_\_

on \_\_\_\_\_

and was amended

on \_\_\_\_\_ (if applicable).

☒ was filed as PCT international application

Number PCT/EP98/07687

on November 27, 1998

and was amended under PCT Article 19

on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations. §1.56(a).

I hereby claim foreign priority benefits under Title 35, United State Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (if PCT indicate PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
Germany	197 54 964.0	11 December 1997	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

Combined Declaration For Patent Application and Power of Attorney (Continued)  
(includes Reference to PCT international Applications)

ATTORNEY'S DOCKET NUMBER

951/48911

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national of PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120

U.S. APPLICATIONS		STATUS (Check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (IF ANY)		

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration number)

Martin Fleit, Reg. No. 16,900; Herbert I. Cantor, Reg. No. 24,392; James F. McKeown, Reg. No. 25,406; Donald D. Evenson, Reg. No. 26,160; Joseph D. Evans, Reg. No. 26,269; Gary R. Edwards, Reg. No. 31,824; Jeffrey D. Sanok, Reg. No. 32,169; and Richard R. Diefendorf, Reg. No. 32,390

Send Correspondence to:

Evenson, McKeown, Edwards & Lenahan, P.L.L.C.  
1200 G Street, N.W., Suite 700  
Washington, D.C. 20005

Direct Telephone Calls to:  
(name and telephone number)

(202) 628-8800

201	FULL NAME OF INVENTOR	FAMILY NAME <u>REIMER</u>	FIRST GIVEN NAME <u>Stefan</u>	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY <u>Puttgenhausen</u>	STATE OR FOREIGN COUNTRY <u>Germany</u>	COUNTRY OF CITIZENSHIP <u>Germany</u>
	POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>Urzkehre 3</u>	CITY <u>Puttgenhausen</u>	STATE & ZIP CODE/COUNTRY <u>D-84048, Germany</u>
202	FULL NAME OF INVENTOR	FAMILY NAME <u>GERBIG</u>	FIRST GIVEN NAME <u>Falk</u>	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY <u>Allershausen</u>	STATE OR FOREIGN COUNTRY <u>Germany</u>	COUNTRY OF CITIZENSHIP <u>Germany</u>
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203	FULL NAME OF INVENTOR	FAMILY NAME <u>BACHMANN</u>	FIRST GIVEN NAME <u>Peter</u>	SECOND GIVEN NAME
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201

SIGNATURE OF INVENTOR 202

SIGNATURE OF INVENTOR 203

DATE

21.06.2000

DATE

28.06.2000

DATE

29.6.00

Combined Declaration For Patent Application and Power of Attorney (Continued)  
(includes Reference to PCT international Applications)

ATTORNEY'S DOCKET NUMBER

951/48911

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national of PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120

U.S. APPLICATIONS			STATUS (Check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (IF ANY)			

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (List name and registration number)

Herbert I. Cantor, Reg. No. 24,392; James F. McKeown, Reg. No. 25,406; Donald D. Evenson, Reg. No. 26,160; Joseph D. Evans, Reg. No. 26,269, Gary R. Edwards, Reg. No. 31,824, and Jeffrey D Sanok, Reg. No. 32,169

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204	FULL NAME OF INVENTOR	FAMILY NAME <u>WEISSER</u>	FIRST GIVEN NAME <u>Dr. Matthias</u>	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY <u>Taufkirchen</u> <i>DEX</i>	STATE OR FOREIGN COUNTRY Germany	COUNTRY OF CITIZENSHIP Germany
	POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>Lackenschusterweg 2</u>	CITY <u>Taufkirchen</u>	STATE & ZIP CODE/COUNTRY D-82024, Germany
205	FULL NAME OF INVENTOR	FAMILY NAME <u>WERNER</u>	FIRST GIVEN NAME <u>Juergen</u>	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY <u>Garching</u> <i>DEX</i>	STATE OR FOREIGN COUNTRY Germany	COUNTRY OF CITIZENSHIP Germany
	POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>Rotwandweg 5</u>	CITY <u>Garching</u>	STATE & ZIP CODE/COUNTRY D-85748, Germany
206	FULL NAME OF INVENTOR	FAMILY NAME <u>ZEIT</u>	FIRST GIVEN NAME <u>Stefan</u>	SECOND GIVEN NAME
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true: and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 204

Matthias Weisser

DATE

3.7.2000

SIGNATURE OF INVENTOR 205

Juergen Werner

DATE

17.7.2000

SIGNATURE OF INVENTOR 206

Stefan Zeit

DATE

30.08.2000